

**WRITTEN NOTIFICATION FROM THE  
INTERNATIONAL SEARCHING AUTHORITY  
(SUPPLEMENTARY SHEET)**

International  
Reference  
PCT/EP2004/050411

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**Re point V**

**Reasoned statement with regard to novelty, inventive step  
and industrial applicability; citations and explanations  
supporting such statements**

1 In the present notification reference is made to the  
following document:

D1: EP 1 278 159 A (EATON CORP) 22 January 2003 (2003-01-  
22).

2 Independent Claims 1 and 2

2.1 Novelty

Document D1, deemed to be the closest prior art, shows in  
figures 2 and 3 and describes in paragraph [0006] to  
paragraph [0016] a method for determining the current  
position of a head of an occupant (18) in the passenger  
compartment of a motor vehicle, said head moving toward an  
automatic dynamic disabling zone (52) in front of an airbag  
module, using an image acquisition unit (22) with an ideal  
line of sight, which is essentially perpendicular to an  
ideal direction of movement of the occupant, in which an  
image scenario (38) in the passenger compartment of the  
motor vehicle including the occupant is recorded at least  
cyclically using the image acquisition unit.

The object of the present Claims 1 and 2 is different from  
this in that

- in the respective current scenario image both the  
position of the geometric center of the head and the  
apparent size of the head are determined in the direction  
of movement;
- the respective current lines of sight of the image  
acquisition unit are defined as a vector, from a defined  
position of the image acquisition unit to the respective  
current position of the geometric center of the head;
- the respective current angles between the ideal line of  
sight and the current lines of sight of the image  
acquisition unit are calculated;
- the respective current values for angle and apparent size  
of the head are stored in a storage unit.

The object of Claim 1 also differs in that

- the value from the storage unit for which the absolute

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sum of the difference between angle and  $0^\circ$  was minimal is always assumed to be the size of the head.

The object of Claim 2 also differs in that  
- the value from the storage unit for which the absolute sum of the difference between angle and  $90^\circ$  was minimal is always assumed to be the size of the head.

The object of Claims 1 and 2 is therefore new (Article 33 (2) PCT).

## 2.2 Inventive step

The object to be achieved with the present invention can thus be seen to be to develop the known method such that the exact head positions of vehicle occupants can be determined.

The solution according to Claims 1 and 2 however appears not to be known per se by any from the documents in the method or generally to be obvious from the prior art.

The method described in document D1 is not able to suggest the solution either, as an ellipse is thereby formed from a segmented image, describing the head and torso area of an occupant, from which a form and movement in the direction of a dynamic disabling zone is estimated.

The solution proposed in Claims 1 and 2 of the present application for this object is therefore based on inventive step (Article 33(3) PCT).

## 3 Dependent Claims 3 to 13

### 3.1 Claims dependent on Claim 1

The dependent Claims 3, 6 to 13, which have further embodiments of the invention according to Claim 1 as their object, also satisfy the requirements of the PCT in respect of novelty (Article 33(2) PCT) and inventive step (Article 33(3) PCT).

### 3.2 Claims dependent on Claim 2

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The dependent Claims 3 to 13, which have further embodiments of the invention according to Claim 2 as their object, also satisfy the requirements of the PCT in respect of novelty (Article 33(2) PCT) and inventive step (Article 33(3) PCT).

4 Independent Claim 14

4.1 Novelty

Document D1, deemed to be the closest prior art, shows in Figure 3 and describes in paragraph [0006] to [0016] a device for determining the current position of a head of an occupant (18) in the passenger compartment of a motor vehicle, said head moving toward an automatic dynamic disabling zone (52) in front of an airbag module.

The object of the present Claim 14 differs from this in that appropriate means are provided to execute the method according to Claim 1 or 2 (see point 2.1).

The object of Claim 14 is therefore new (Article 33(2) PCT).

4.2 Inventive step

The object to be achieved with the present invention can thus be seen to be to develop the known device such that the exact head position of vehicle occupants can be determined.

The solution according to Claim 14 however appears not to be known per se from any of the documents in the method or generally to be obvious from the prior art.

The device described in document D1 is not able to suggest the solution either, as an ellipse is thereby formed from a segmented image, describing the head and torso area of an occupant, from which a form and movement in the direction of a dynamic disabling zone is estimated.

The solution proposed in Claim 14 of the present application for this object is therefore based on inventive step (Article 33(3) PCT).

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